



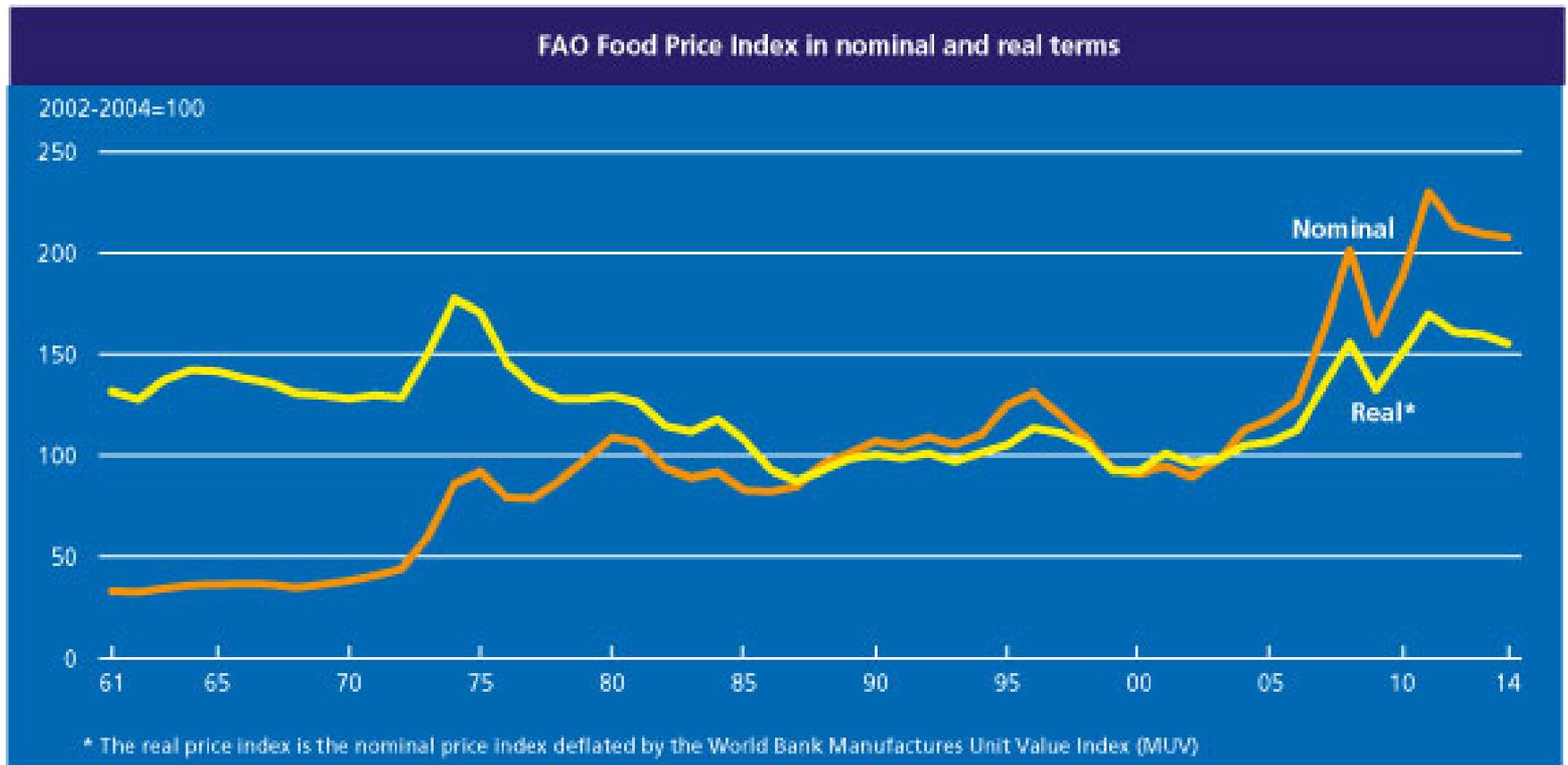
HARVARD | BUSINESS | SCHOOL

Volatility: The Agribusiness Response

Mary Shelman
Director, Agribusiness Program, Harvard Business School
July 15, 2014



2007+: A New Era for Agriculture

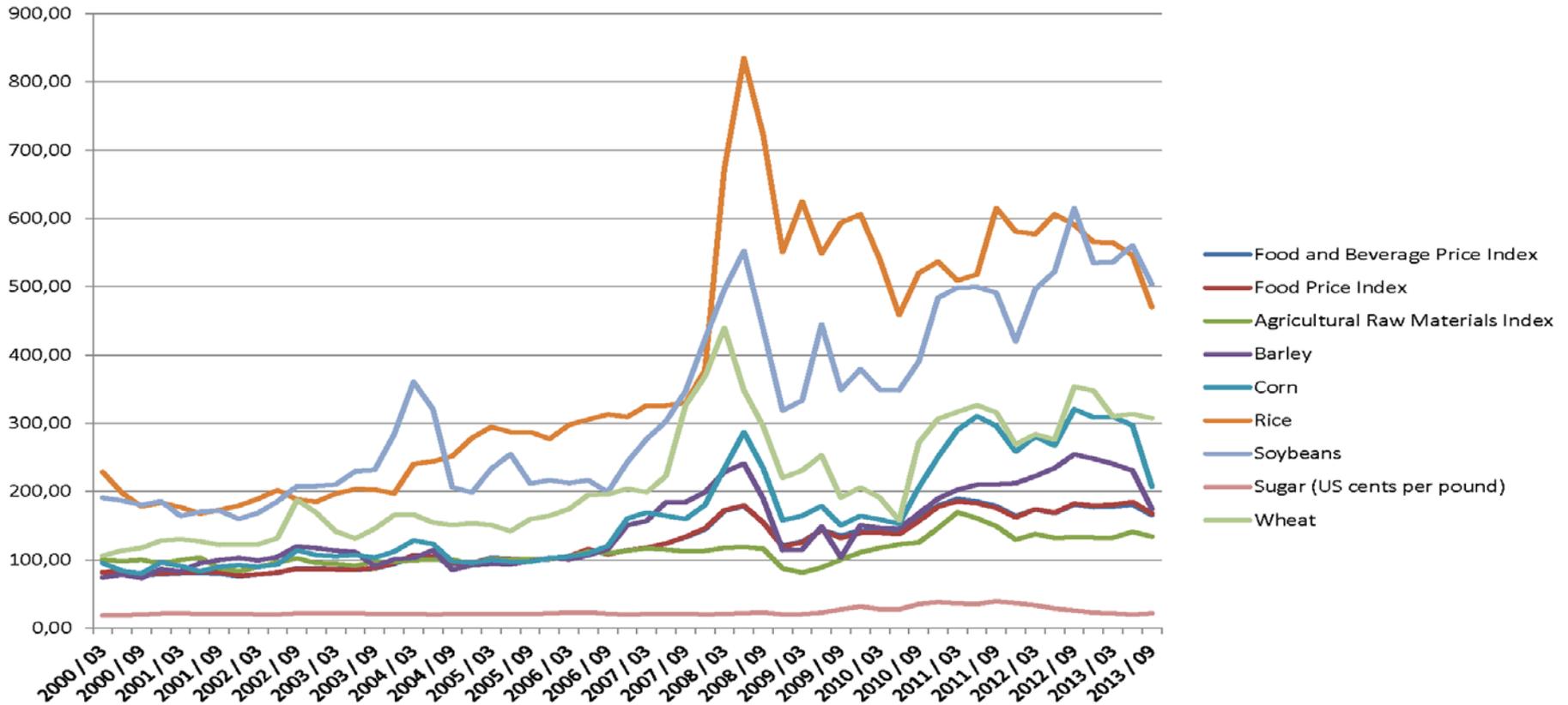


Source: FAO, March 4, 2014

Increasing Volatility Across Commodities

Development of primary commodity prices since 2000

in US\$ per metric ton unless otherwise noted, indices: 2005=100



Source: IMF Primary Commodity Prices, 2013

Volatility Drivers

Fundamental Shift Leading to Supply-Demand Imbalance

Demand

- **Population** and **Income** Increasing
- China and others eating **more meat, dairy**
- **Biofuel** use continues

Supply

- **Productivity growth** not keeping pace
 - **Low Investments** R&D
 - New land = **Marginal Land**
- **Water** constraints
- **Weather** events
- Lower commodity **stocks**

Response 1:

Supply Chains – From Farm to Fork

Integrating Backwards to

- Manage volatility
- Secure current and future supply
- Ensure food safety
- Guarantee traceability
- Meet sustainability targets
- Protect brand reputation



McDonald's
i'm lovin' it

Our beef is 100% Irish, 100% local.

Sourced from farmers we know by name, like Liam Delaney, Lado.

Liam is one of our local Irish beef farmers. In fact, he's one of the 2,000 Irish farmers who supply our restaurants in Ireland with Irish beef from their Bord Bia Quality Assured farms.

Liam knows that Irish people appreciate Irish beef. And so do we. That's why all of our beef is 100% Irish, sourced locally from farmers we know by name.

QUALITY
CERTIFIED
MEMBER

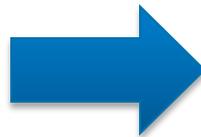
All our beef is 100% Irish supplied by certified members of the Bord Bia IQAS

Tesco Group Food



Previous Model – Beef Supplier

- Supplier negotiations on raw material (80% of costs)
- Supplier supply chain management
- Supplier negotiated packaging
- Blend of pack prices, tender, and kill model
- Supplier managed logistics



Revised Model – Beef Supplier/Group Food

- Group Food negotiated raw material (80% of costs)
- Supplier/Group Food supply chain managed fixed kill and traded primal
- Group Food negotiated packaging
- Transport yield and process rate model
- Supplier/Group Food managed logistics

Olam 2009

- **82% in emerging markets & 18% in developed economies**
- **Strong emerging market expertise**

1994

- 7 Products
- 4 Countries

2001

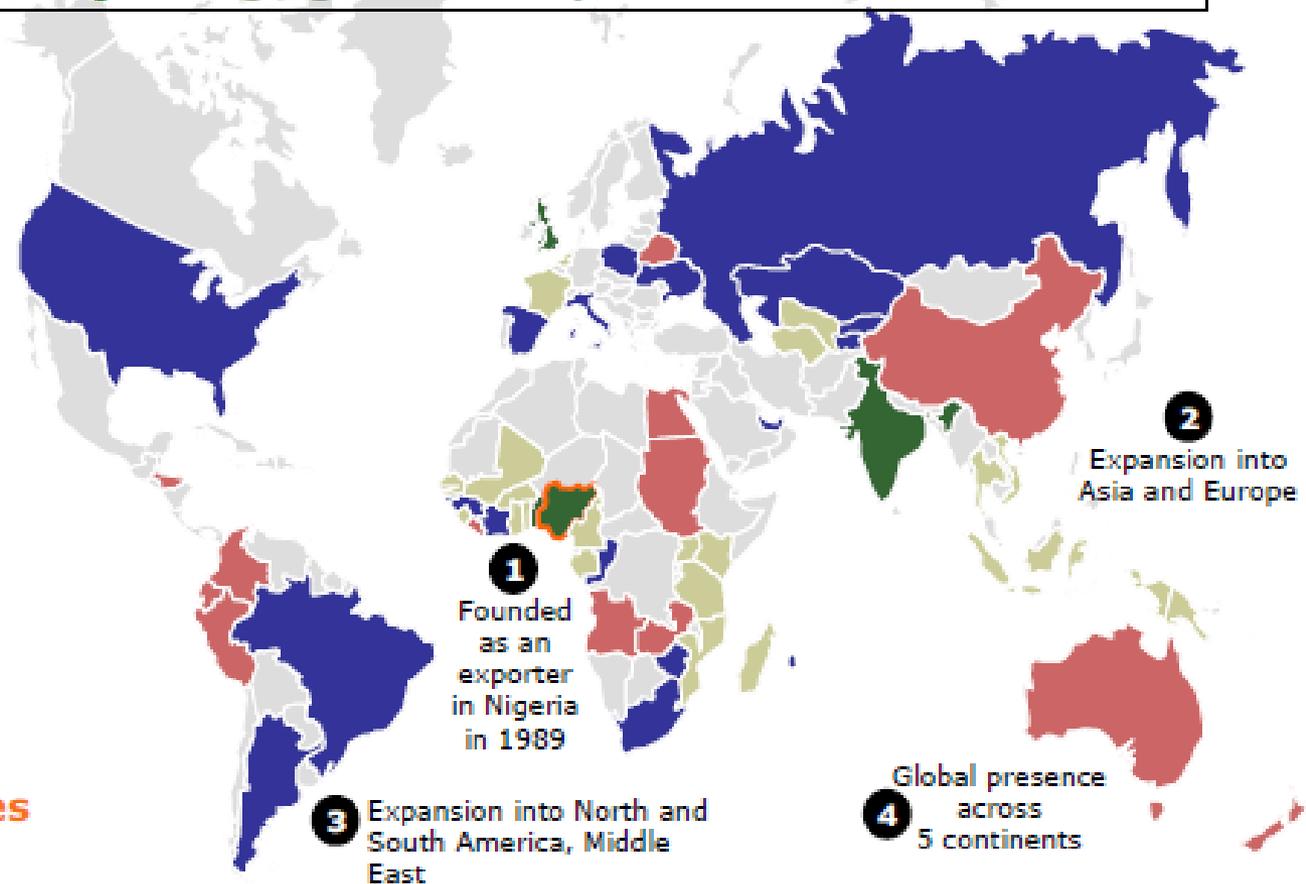
- 10 Products
- ~20 Countries

2005

- 14 Products
- ~40 Countries

Today

- **20 Products**
- **~60 Countries**



Olam Investment Spree 2009-2012

2.2 million hectares across 10 products in 11 countries

- Almonds, rice, dairy, ...

- **Tomato processing** California
- **Cashew processing** Tanzania, Cote D'Ivoire
- **Cotton ginning** Mozambique
- **Flour milling** Ghana, Nigeria
- **Fertilizer** in Gabon
- **Sugarcane** in Brazil

Response 2:

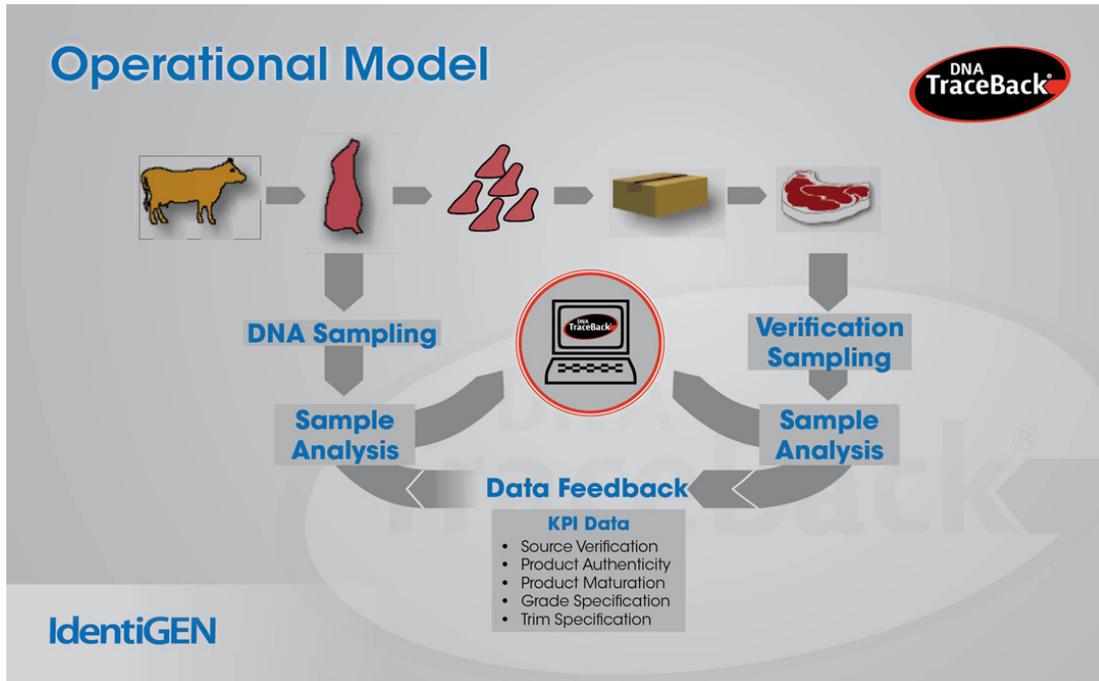
Differentiation

Tailoring products through special traits, sustainable and/or ethical sourcing, whole chain traceability in order to:

- Stabilize margins
- Increases customer willingness to pay
- Basis for branding

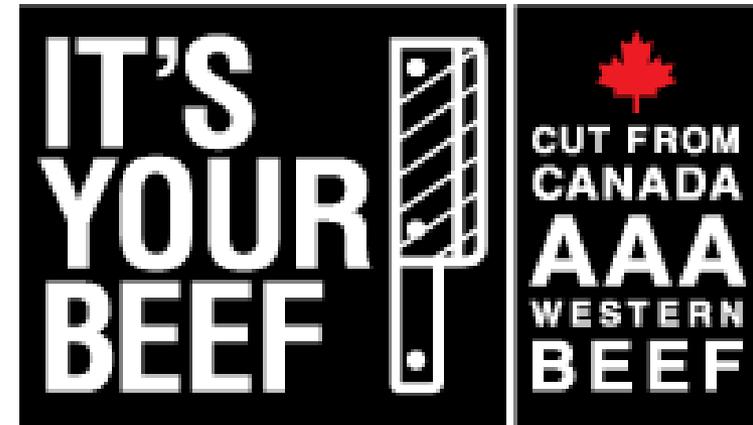
Aligned supply chain, feedback loops

IdentiGEN DNA Traceback



Source: IdentiGEN

**M&S: We trace it,
so you can trust it**



WWW.DNATRACEBACK.CA

Loblaw's Unveils DNA-Traceback Beef

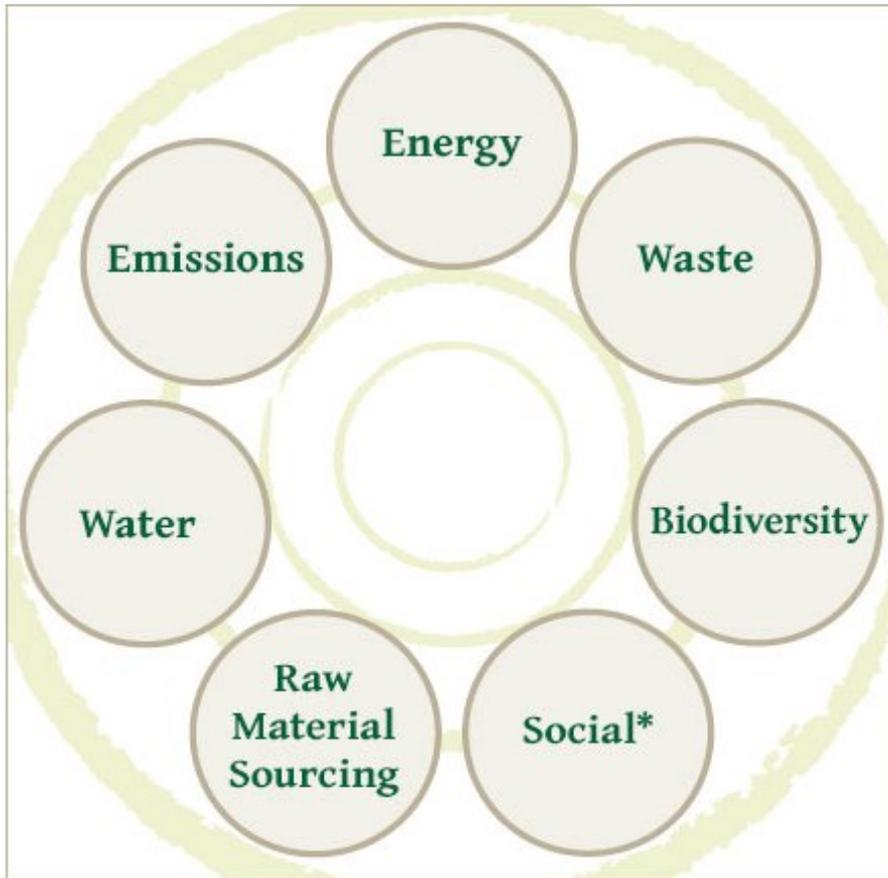
Branding Ireland



Launched June 2012



Origin Green Target Areas



**365 companies signed up
75% Irish food exports
covered by end of 2014**

Response 3:

Supply Growth

Investments in land, technology, infrastructure, training in order to:

- Stimulate production
- Increase buying options
- Assure long-term supply

Fonterra and Nestlé building large-scale dairy farms in China



Coca-Cola & Jain Irrigation helping 50,000 Indian mango growers



Mission Produce: Avocados in Peru



August 2011

Mission Produce: Avocados in Peru



December 2013

Response 4:

International Expansion

Enter / grow in new markets

- Counter slow growth in traditional markets
- Establish global sourcing
- Spread risks

China

- Feed **22% of population** with **<10%** arable land
- **Pork consumption doubled** since 1990 to 40 kg/person
- Relentless **urbanization**
 - 15 to 20 million people moving to cities every year
- **By 2010**, more **premium consumers** than all of Europe
 - Largest grocery market in the world
 - A new KFC opens every 13 hours!

OSI grows lettuce for McDonald's China



Modern broiler farms

...and now broilers



China

- Food policy – Critical!
 - Produce? Import?
- FDI \$12 B in Brazil in 2011 (\$82 M in 2008)
 - Also Africa, Australia, New Zealand....
- Buying companies as well as commodities
 - Smithfield, NIDERA, Nobles,

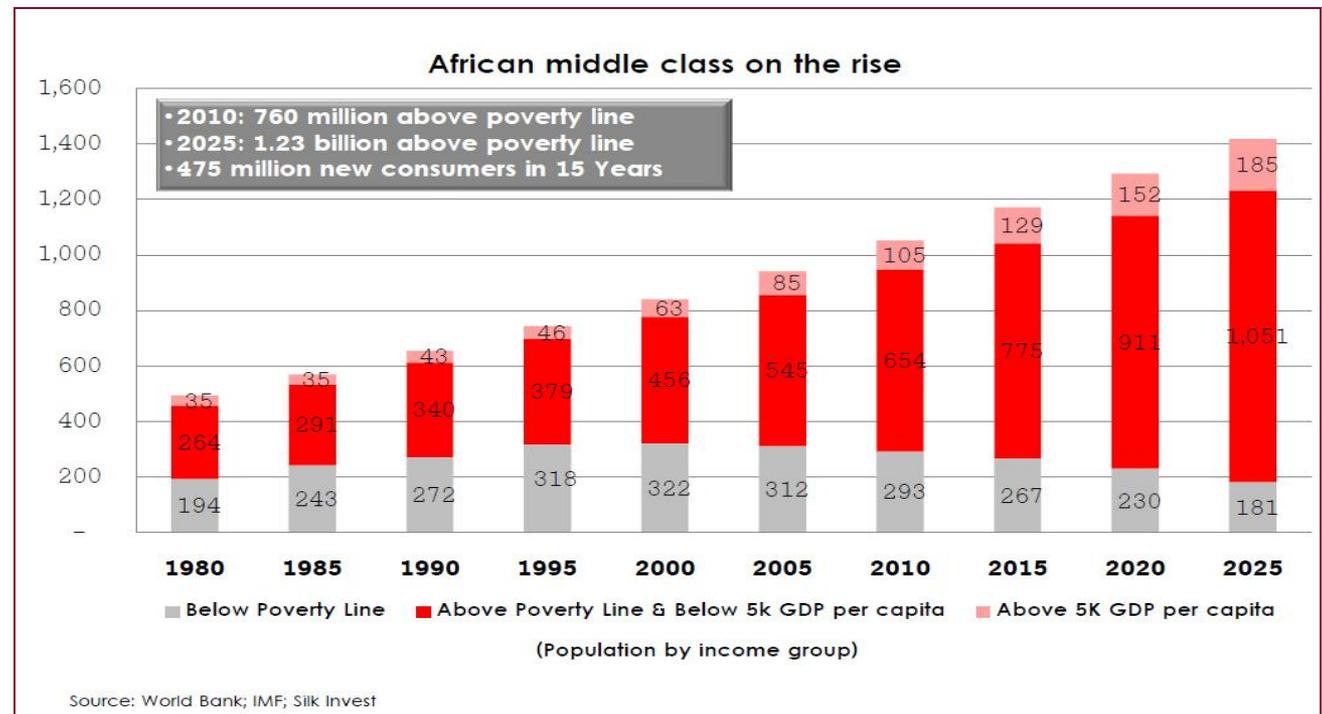


Africa on the Move

- 6 of top 10 fastest growing economies
- 60% of world's uncultivated arable land

\$1 TRILLION food market by 2030 if:

- Capital
- Electricity
- Technology

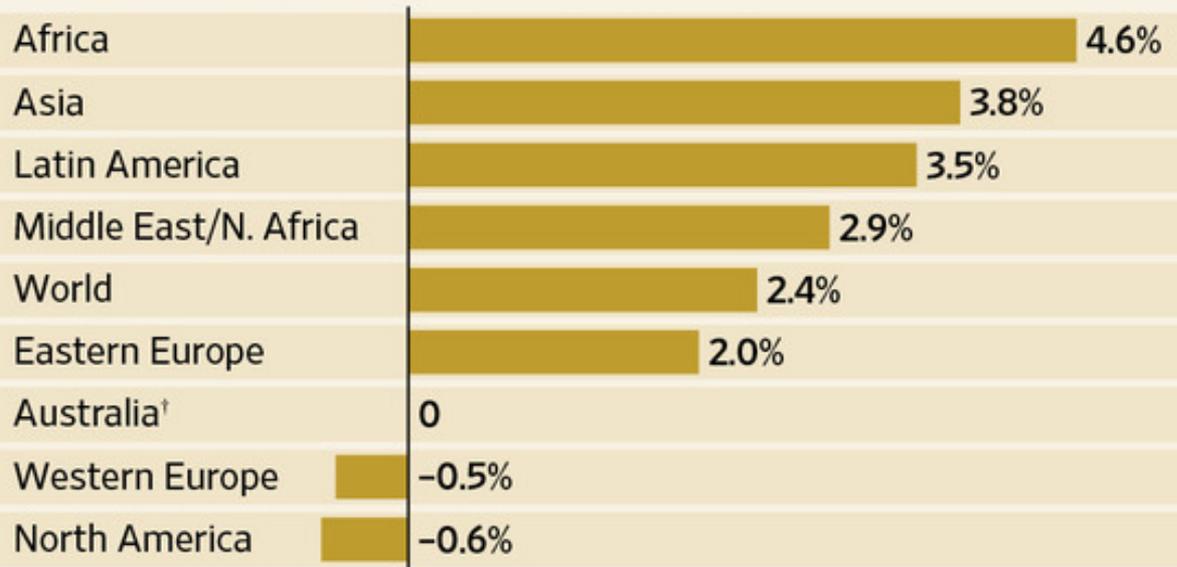


Diageo Africa: “Shaving the Iceberg”



A Bubbling Market

Forecast annual growth rate in volume of beer*



*Five-year compound annual growth rate, 2012-16 [†]And neighboring islands

Source: Canadean via SABMiller

The Wall Street Journal

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